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THE CULTURE STATUS OF THE AMERICAN INDIAN AT THE PERIOD OF HIS DISCOVERY.

DANIEL G. BRINTON, M. D.

There is no "law of evolution" for a race. It is formed, flourishes and fades, and its place knows it no more. There is none even for a species, nor for a genus, as mutely testifies each "scarped cliff and quarried stone."

Therefore the question, "Was the red race of America growing in cultural development at the date of the discovery?" cannot be answered by general platitudes about human progress. Here and there, doubtless, true examples can be quoted of improving and advancing communities in the New World. Were they more than the few green and fruit-bearing boughs on some ancient and decaying tree? There is sad cause for the point of interrogation. Let me state it.

Suppose we choose the half dozen or so areas over the continent where modern archaeology discovers the highest developed ancient culture, and compare their condition with that of the same areas at the time of the discovery. This is practicable, and it seems fair. It ought, indeed, to be convincing, if the general reply should be the same.

Let us begin at home, with the fertile valleys of the Ohio and upper Mississippi rivers, now teeming with their millions of inhabitants, the very granary of the world.

What was it when the first missionaries and white traders penetrated its expanse? An uninhabited desert, peopled by a few vagrant hordes of hunters, without fixed abodes, leaving no mark on the soil of their fugitive occupancy.

What was it, five or six hundred years before? A thickly peopled land, its productive river bottoms waving with planted corn, nourishing an industrious population, skilled in the arts of the potter, the weaver and the stone dresser; a people who piled up defensive works five miles in circuit and involving the transportation of six million cubic feet of earth and stone (Fort Ancient); who erected over their dead heroes massive tumuli some seventy, some ninety feet in height; whose gods were limned on the soil in graceful figures hundreds of feet in length; whose commerce was of such extent that it brought to their temples and firesides the mica of the southern Appalachians, the shells of the tepid Gulf of Mexico, the copper from Lake Superior, even the obsidian from the volcanoes of the distant Rockies.

Was not this a civilization lost, and lost forever, to the American race?

Change the horizon to the far Southwest. There, in an area four hundred miles square, we find the plateaux seamed and fissured with water courses flowing in deep ravines called canons, often sinking from two to six thousand feet below the surface land.

* Abstract of a Lecture delivered May 29, 1897.

Clinging like swallows' nests to the sides of the canons, perched on rock-shelves or under projecting ledges, are thousands of little houses, neatly built of dressed stone and mortar. Their lines are workmanlike, meeting at measured angles or graceful curves. The debris in them contains deftly turned and colored drinking cups and jars, implements of bone and stone, weaving apparatus and webs of woven stuff. Even their window shades are discovered, and they are of narrow slats of wood, just like those still found in our old farm houses. Everything betokens a skilled, sedentary, industrious people.

Were they there at the discovery? Not a single soul. Though we have the records of exploration back to 1540, we have not a tittle of evidence that any of these cliff dwellings held its proper occupants at or since that time. Prowling savages roamed the canons, arid desolation crowned the plateaux, when first they were seen by white men. It was another lost civilization.

Take another culture, close to the last mentioned, that of the pueblo builders.

There are still pueblos; there were seven or more in 1540, when Coronado explored the land. Their inhabitants build walls of adobe, and maintain a painful existence by planting small patches of corn and learning the art of starving. But what is the pueblo culture of today compared to that of perhaps a thousand years ago? We know what that was by the still stately ruins of deserted houses, far surpassing in size those now inhabited. One building of the Casas Grandes is 800 feet long by 250 feet wide.

But more marvelous is the vast irrigation works of these unknown peoples. In the Salt River valley there still remains one of their aqueducts twenty feet wide, four feet deep and five miles long. The soil all along it is a mass of cultural debris, pottery, bricks, stones and bones. There is reason to believe that they had one or more domestic animals, and unquestionably a dense population then filled this favored spot and many another like it.

There is no comparison between their civilization either in density or development, and that of which we have historic records in the area mentioned.

Go further south. Ascend to the temperate plateau of Central Mexico, where along the fertile borders of the lakes Cortes found the imposing city of Teuschtitlan and the strong federation of the Aztec tribes. Cortez had not expected such a culture as he there saw. In his letter describing it, he expresses his astonishment. Their arts, their markets, their government, their buildings, all surprised him. No wonder, for, think of it, the Aztec government required for its literary work 24,000 reams of paper annually!

Was this strange city of the lakes the pinnacle of a long progress? Ah no! A dozen miles from it, in sombre silence, ruined and desolated, gloomed the majestic remains of a far more wondrous construction, the "City of the Dead," Testihuacan. There rose two mighty pyramids built in time beyond tradition, one 150 feet in height, the other and greater, mounting 216 feet into the air over a square base 750 feet on each side. A solid enclosure of masonry thirty-two feet in thickness served as their temenos. Nothing elsewhere in Mexico, nothing elsewhere in America, equals this giant structure.

Who built it? Who built the neighboring but less remarkable pyramid of Cholula, itself surpassing in cubical contents that of Cheops?

No one knows. Even tradition is silent. Fable alone gabbled of "Tolteca," children of the sun, long since gone; magicians, millions in number, taught of the gods.

Let us seek this lost civilization elsewhere in Mexico, if we can find it. We may go on to Oaxaca, and stand before the gloomy sepulchral palace of Mitla. It is built of stone blocks with grecque patterns outlined by inserting smaller pieces, twenty-eight distinct patterns in all, more than on any other building in

the world. The facade is 130 feet in length, and some of the stone blocks are twenty feet long, of hard granite. We know neither its builders, nor when it was built. Nor did the Zapotec Indians know, who lived there when the Spaniards first came. The best archaeologists today doubt if that tribe was ever equal to the task. Another lapsed culture.

Undeterred by this, let us turn to the great Mayan stock of Yucatan, Tabasco and Guatemala, the most cultured of all the American race, and seek in them to measure the march of progress. But at once we are checked, for in their own authentic traditions they acknowledge that their glory had departed and their golden age closed with the destruction of the federation and the fall of their capital, Mayapan, about 1420. If we wish confirmation of this, we have it in the undisputed fact that their glorious city of Palenque was an untenanted ruin in 1522; that Copan was probably the same; and that the decay of the former civilization was plainly apparent to the white invaders, and is frequently referred to in their accounts.

So much for North America. Was the race more prosperous in the southern continent?

To be brief, I shall examine only three culture centers, but the most conspicuous of all. The first shall be of that remarkable development along the coast of Peru, near Truxillo and Callas. It is known as the Chimu or Yunca culture, and is quite different from that inland. To it we owe the extraordinary temple of Pachacamac and similar buildings. As potters and workers in bronze the Chimus were remarkable. But they need not detain us. Their culture fell into decay, and their nation was subdued by the Incas, seventy-five years before Pizarro landed.

And at the time of Pizarro, was the Incarian culture, that of the Quichuas, much better off? The realm was torn by internecine feuds; the vast irrigation works of earlier generations had fallen into decay; ambitious edifices were left half constructed; and, as Cieza de Leon testifies, the land was filled with ruins.

More than all, far back of the Quichuan culture which the Spaniards found, was another, marvelous, mightier, whose strange monuments at Tiahuanuco and elsewhere remain, the puzzle of the antiquary and the despair of the historian. Its huge stone blocks, monolithic gateways, massive lintels, carved to a nicety unsurpassed by any in Egypt or the East, were scattered around lake Titicaca in the same wild neglect at the time of the conquest as today—tombstones of a perished civilization.

Finally, imagine ourselves transported to the province of Tucuman in the northwest corner of the Argentine Republic. It is worth while, for there we can see the only aboriginal structures in stone, east of the Andes, in South America. They are heavy walls surrounding eminences, fortresses probably; circles and lines of monoliths, resembling those of Stonehenge and Carnac; single upright stones, engraved in curious figures, and the like.

Who created those structures? Vague tradition says "The Calchaquis." Who were the Calchaquis? Nobody knows. What has become of the Calchaquis? Nobody knows. What we do know is that when the Spaniards first entered that province, its inhabitants were wild savages who knew no more about building stone walls than they did about navigating a great circle. Another lost civilization.

Enough of them; enough, and more than enough, to show that in the American race at the time of the discovery we see a race in its decline, drifting toward deeper savagery, toward degradation and degeneration. The writing was upon the wall, the edict had gone forth, the last trump had sounded, and the race was doomed.

D. G. BRINTON.

With a reasonable familiarity with Indian implements, and a great deal of time spent in study of how they were employed, and available records recalled referring to aboriginal life, I would express the opinion that, when first brought in contact with white influences, the North American Indian was living in approximately the lowest stage of cultural development. His arms and implements were of the rudest character; the bow and arrow being probably the highest example of approach to a machine in his possession; he could make fire with two sticks; could grind a blade to a celt or axe, and knew the art of chipping stone; could plait grasses and bark, and work in feathers; used colors, and could cut out wood and stone into boats and bowls. Of art he apparently knew little deserving of the name; he lived in simple houses, or in none at all. I see absolutely no reason to believe that the native had receded in culture anywhere on the continent. Though he had probably a greater familiarity with sources of supply for material and food, there is doubt if there had been any change in his knowledge of manipulating the same.

The mounds are evidences of heaping earth or stone to a height over the dead; or as lookout points; or as places of gathering, and appear to be common to the stone age of the world.

On the southern continent the native had made progress in architecture; used lime apparently; and had made some advance also in the use of metals; with tools and their uses there is doubt how far he was superior to the savage of the northern continent.

The arrival of the Spaniards on the continent, and the coming of the French, the Dutch, the English and Swedes, each and all probably influenced aboriginal life and implements at vast distances in the interior long before there was immediate contact between the races.

That the mounds and their contents are evidences of superior, or even a different, race, I do not believe. The contents of the mounds are so commonly of European origin that the more of them that are opened the more we are surprised that their art contents are influenced commonly from Europe.

JOSEPH D. MCGUIRE.

Ellicott City, Md.

Prof. Mercer's idea is good, that the status of the North American Indian can be best treated by districts. I speak, therefore, of that region which I have studied most, New York and the country north of Lake Ontario. Here it is certain there has been a decadence in stone art, the finest articles being those of an early day. Out of all the beautiful articles of polished stone, so common around the great lakes, the celt or ungrooved axe is the only one of note that survived here 300 years ago. Had the early inhabitants been all of one race, the answer would thus be clear, but they were not. They were distinct in origin, habits, implements and utensils, and decidedly differed from their Iroquois successors. We cannot, therefore, argue from the one to the other. On a broader scale the same thing is true. Our eastern Indians made no stone tubes, bird amulets, gorgets, banner stones, gouges, potstone vessels, or large flint spears at the time of the discovery. It is doubtful whether at that time many made stone pipes and they certainly did not in New York. In a broad way there had been a falling off in art.

The Algonquin family may at that time have been comparatively new in the East, as the Iroquois certainly were. The real question is thus limited by time and race. Were both these recent families gaining ground at that time? Their predecessors have little to do with the question. We can only judge of the late comers by examining a series of their dwellings, as well as their social and po-

litical condition. As to the first, I am fortunate in being where such a series can be studied. The other depends on observation, tradition and history.

It may be an advance or not to work in clay, rather than in stone. The one is plastic, the other requires more skill. The Iroquois had much taste, and were certainly making fair progress when the colonization of New York began. In boldness of design and general richness of ornament, the earthenware of 1600 was an advance on the century before, and so continued for a time. Old ideas were not laid aside, but improved. This is hardly true of carving in bone, nor did they improve in stone work, for the white man brought them better tools. They were skillful carvers in wood at an early day, as they are yet in a different way. They made thread and nets, and mats for their houses, but an Onondaga squaw makes thread now as her ancestors did 300 years ago. They have not improved their pestles and mortars, nor can the white man do this. They had made a gain in defensive works.

Politically the Iroquois were certainly improving when first known, and their system of elastic union has called forth the highest praise. Morally and socially there may have been an upward tendency, but it is hard to tell. On the whole, however, it may be allowed that this family was progressive, and had not attained its highest possible culture in any way. The proof is too voluminous for a brief paper.

W. M. BEAUCHAMP.

Baldwinsville, N. Y.

I have explored the valley of the Delaware river from its sources to the sea and gathered from its rocky non-tidal areas and from its meadow banks and bluffy shores, washed by the unresisted tide, over one hundred thousand objects of stone, fashioned by the so-called Delaware Indian, and the demonstration is complete that the original inhabitant of this river's valley dwelt here so long ago as when the narrow intervales were filled with ice and an arctic fauna roamed the ancient forest; that later, with amelioration of climate and a change of fauna, arose a change of "culture" and more specialized forms of handiwork, particularly hunting and fishing implements; and lastly, the Indian of Columbus' time, with a fuller knowledge of minerals and their value as the crude material for the elaborate outfitting his mode of living called for.

These conclusions have been reached after more than twenty years' close application to the subject and based upon exploration in its fullest sense, and not mere occasional visits to unrelated localities. Every care has been exercised to prevent being misled and the results, as a whole, of endless digging and examination of exposures of quarternary deposits, confirm the conclusions I originally set forth several years ago. The objections raised have, in every case, been answered exhaustively, and only the deliberate mis-statements that so frequently appear in reputable journals, have been ignored. The most recent explorations near Trenton, N. J., conclusively prove the general use of argillite before jasper was mined for implement-making, and that this was even so far back in time that the physical geography of the region differed from that of the present day, and before the present soil had been accumulated. Even this is disputed, but it should be remembered that facts may influence men's thoughts, but men's thoughts cannot alter a fact.

CHARLES C. ABBOTT.

Trenton, N. J.

I may venture to add a few lines to your interesting discussion relative to the culture status of the American aborigines at the period of European conquest. There appears to be a somewhat prevalent impression abroad that there was a general weakening and decline of the forces of native progress, but I have never

been able to share this view; indeed I entertain a very decided feeling that taken as a whole a steady advance was going on.

The growth of a family or nation is in the nature of things not a uniform growth. There are haltings and forward steps in the history of the minor groups, but these can hardly be taken as an index of the tendencies of the race. In the pre-Columbian time famine may have affected a valley or region, interfering with progress, but nature recuperates quickly and the famine period would be limited. Wars must have resulted disastrously to some tribes and thus certain of the less warlike groups whose arts were highly developed would be reduced to a lower level of culture. But the environment that nurtured the higher culture would again in time assert its influence. Complete lapse would be exceptional. Wars were not general and could not affect the great body of a race distributed over a vast continent. There are numerous causes that could have operated to produce local decline, giving the impression to local observers that retrogression prevailed. The invasion of the great Mississippi-Ohio region by the buffalo must have had a profound influence upon the status of the mound-building peoples. The presence of a new and extraordinary source of food supply would give rise to new activities, and agriculture and other sedentary arts—the mainstays of culture—must have suffered greatly; besides the herds were no doubt followed in their migrations by hunter tribes who thus become invaders of the territory over which the herds chanced to range, involving many nations in turmoil. But these conditions were not necessarily permanent and the fertile region would certainly, in the fullness of time, induce a renewal of the sedentary life and its activities. Perhaps even the energies and powers developed by the buffalo-hunting life would have placed the culture movement on a higher plane than before.

Our aborigines were a vigorous people without suggestion of mental or physical senility. They were in nearly, if not all, essentials the peers of any of the races of the world. They were in possession of a continent rich in all essential resources, animal, vegetable and mineral, and although they had not an equal start with some of the old world peoples, they were practicing agriculture successfully and beginning to develop the vast mineral resources in a most vigorous manner. I see no good reason to doubt that they were on the threshold of a career that would have led in good time to the full utilization of the boundless resources of the country.

I speak only in general terms, since a consideration of the state of particular peoples at a given period can be of little value in determining the general tendencies of the race.

W. H. HOLMES.

U. S. National Museum, Washington, D. C.

PROF. HILL-TONT ON SURVIVALS OF THE STONE AGE AND THE SOURCES OF JADE.

I have never myself witnessed the manufacture of any stone implements by the Indians; nor do I know of any person in the Province who has. The manufacture of stone implements is now entirely unknown to the modern tribes of British Columbia. A few old men of some of the tribes remember the use of such implements—(indeed in the interior among the northern Denes the stone scraper is still in use for hide dressing)—but very few indeed know how to make them. The use of the Pertle hammer is common here still. I have often seen the Indians here use it—in fact they prefer this tool to the white man's hammer. They use it for canoe making and cedar splitting to drive their wedges. This is the only stone implement that is commonly employed by the present Indians of this area.

Father Morice, of the Stuart Lake Roman Catholic Mission, B. C., tells us in his "Notes on the Western Denes," how the old-time Denes manufactured their arrow-heads. "The first operation," he says, "consisted in roughly blocking off with a hard stone the pieces of flint (?) the removal of which was necessary to obtain a vague resemblance to the intended weapon. Then grasping the flint lengthwise with the closed fingers of the left hand, the arrowsmith carefully pressed off the flakes with an elongated stone held in his right hand until the desired form was obtained. A piece of buckskin served as a pad to protect the hand against the asperities of the point. I owe," he goes on to say, "these details to an old chief who has been an eye witness to the operation. I should add that in not a few cases a moose's molar tooth replaced the long chipping stone. I know also of a few arrow-points the sharp edges of which have been polished off by friction."

You will gather from this that the art is a lost one; and though some of the "old-timers" will tell you they have seen such and such things done, I am inclined to think they not infrequently are unwilling to acknowledge that they know no more than the "new-comers," and draw somewhat upon their imaginations. Steel and iron utensils have been in the possession of the natives of this Province for at least a century, and their superiority generally brought about the disuse of stone before the oldest "old-timer" arrived. My experience of "old-timers" leads me to accept with a great deal of caution any information they may give on a subject they were admittedly not very interested in at the time when they might have acquired the information. The more sincere of them will admit that they can't remember, not having taken any interest in the matter; and if the oldest Indians scarcely knew how their ancestors made their stone tools, etc., it is not likely that any old-time white man will know.

My time is so fully occupied that I can not now enlarge on Indians and Indian modes of life in this region. On this subject I generally embody information I may obtain in reports to one or the other of the learned societies; but it gives me pleasure to tell you that my visit to the Lytton district of the Fraser river this summer, in company with Mr. Harlan I. Smith, resulted in making the fact quite clear where the natives of this part of the Province got the material from which they manufactured their jade implements. I discovered, and also pointed out to Mr. Smith a great number of waterworn blocks of jade, or, more properly, nephrite, along the banks of the Fraser at this point, some of which, taken from the old camp sites on the Lytton ground, bore the marks of cutting; and the interesting feature of the whole discovery is that these marks show clearly and distinctly that the Indians employed two methods in their stone cutting and not one only as hitherto held. On some of the jade boulders there is a rounded groove, evidently made by grinding; on others the groove is angular, showing that the block had been cut by some pointed instrument. This instru-

ment, as the old Indians informed both myself and Dr. G. M. Davidson, on different occasions, was a piece of harder stone, such as quartz crystals. I have myself experimented on the boulders with an agate and find it quite easy, though of course slow work, to cut grooves similar to those cut by the primitives themselves. With regard to the rounded grooves, it has been variously stated by different writers that they are produced by grinding with a bow and sand; or with a piece of wood and sand. With regard to these methods I would like the gentlemen who make these statements to try and produce a groove such as is found in some of these stones by these means. It is quite possible to grind the groove deeper by these methods when once it is started, but it is physically impossible to start a cut or groove in this manner. A moment's reflection will convince any one that the rounded, water-polished, slippery side of a hard boulder can never be cut into by drawing a bow over it; or even by rubbing it with the edge of a board in conjunction with sand. To begin with, it will be impossible to keep the sand upon the stone, and further, both the bowstring and the wood would wander far too much ever to cut a straight line, as all the cuts I have seen are, even if the sand would lie on the stone. We found near many old camp sites pieces of worn and ground sandstone similar in texture to the grindstones of commerce. Some of these have rounded edges which fit exactly into the rounded grooves in the boulders, and that it is possible to make grooves in the jade by this means I have proved by making them myself. The conclusion therefore at which I have arrived, after extended considerations and experiments, is this; that the rounded cuts were probably effected by means of a sandstone grinder; the angular or sharp cuts by crystals of quartz or other material. I may say that no jade boulders having the sharp, angular cuts or grooves had been found or seen before I discovered mine at Lytton. I enclose with this a rather poor photograph of a trio of these worked stones, (too imperfect to be reproduced—Ed.) the largest of which shows even in the photograph the acute cut in it where the piece taken for making an implement has been broken from the mass. There is upon the upper face of this block, which weighs about 75 pounds, a second shallow groove absolutely identical in appearance with one I have myself made alongside it by means of a crystal borer of agate taken from an Indian grave. So, whatever may have been the method of cutting the rounded grooves, the angular ones were cut as stated by the natives themselves, by means of crystals. It was, as you know, at one time thought that the possession of jade implements among the American Indians pointed to their migration from the north, where the jade has been found in situ; but jade implements can no longer be regarded as having any ethnological value. There is enough nephrite in the bed of the Fraser to supply the whole world with implements of this material, and there are probably beds or boulders of it in many other parts of the great Pacific chain from which the jade implements and belongings of the American Indians undoubtedly came. There is no doubt about the material being genuine nephrite. Dr. Harrington has analyzed several specimens from the Lytton region, a description of which may be found in the Eighth Volume, Transactions of the R. S. C., Section 3, page 61.

I have written very hurriedly and consequently very badly, but I hope you will be able to read it. I would like to take this opportunity to state that I am open to carry on any investigations in this Province among the Indians for any one your way who will be good enough to supply funds for same. We have just begun an ethnological survey of Canada, for which funds are very much needed, the British Association not being well supplied in this respect.

CHAS. HILL-TONT.
Member of British Association, Etc.
Rockland College, Vancouver, B. C.

A SEASON'S RECORD FROM THE EXHAUSTED EAST.

With the scaling up by the frost of the source of the archaeologist's yield in the north, comes the season for taking note of the discoveries and observations of the past months. Accordingly, in the following paragraphs I wish to set before the readers of The Antiquarian a record of the finds made by myself in the neglected East, and here within the limits of the city of Troy, N.Y. While there have been, and still are, in this region, numerous collectors of elegant specimens for the cabinet shelves, little, I am inclined to think, has been undertaken from a scientific motive; and so it happens that a rich mine of antiquities remains here to this day unworked; and it is specimens from this mine to which this paper relates. In a brief correspondence in the Antiquarian for August, I gave a sketch of this field, together with outlines of some of the objects found up to the date of writing. Since that time persistent search has brought to light still more interesting things, which will be here reported with such helps from the artist of the Troy Budget, and from the writer's pencil, as will serve to convey a fair idea of the collection. It was in May last that I discovered the main object, which is no less than a monument of the old race which occupied this territory—how long ago no one can safely say. From evidences surrounding it, and from want of a better name, I have called it "the rock altar." It is an erratic sandstone boulder, five feet in length by two and a half in width, and of, as yet, unexplored depth in the soil. From one end is scooped out a symmetrical bowl, four inches in depth and twelve by fourteen inches across, with an outlet or channel down the north side of the rock. The remainder of the rock's surface has been in times past subjected to intense heat from fires kindled upon it, from which cause it has become splintered and broken horizontally to the depth of several inches, and the original gray of the material discolored to a reddish brown. Large and small scales from this burned surface are unearthed from the soil around the erratic, all showing the action of fire, some of them being burned a deep red color throughout. This splintering has lowered the edge of the bowl an inch or two on the side where it occurs, but has not otherwise changed it. Aside from this, there is no trace of fire action on that part containing the cavity. Nor is there any such trace upon the circumference of the rock. When discovered, the block was covered with earth, with the exception of a projecting end—the end containing the excavation. This exposed some three inches of the outer rim of the bowl, and this led to the discovery. The fact of the covering is rather singular, as a smaller rock beside it, derived from the same source, shows a full foot's depth of surface above the soil. Hence I am inclined to think the earth covering artificial, perhaps done for purposes of concealment, or for furnishing a soil-bed for the fire. I had long been looking for a stationary mortar, and at first believed I had found one after all. But a careful examination made this view untenable. If intended for a mortar, it had never been used as such, as the inner surface of the excavation, instead of being smoothed by pounding, was as rough and unworn as at the moment the picking was completed. And the fired surface adjoining had its negative word to say on the subject.

I considered that the firing might have been done by farmers in clearing the land, while burning brush, but this view was given up when on digging around the whole rock, charcoal in a finely divided state was found to occur at the depth of two feet in the compact clay, and none nearer the surface. Hence, I believe the object to be an altar where at ancient times were practiced the rites of religion or sepulture. Other discoveries immediately surrounding would seem to support this belief. All around in the soil are found slabs of sandstone ranging from six inches to two feet in length, and of various breadths. All are thin, none of

them being more than an inch and a half thick; and all of them are smooth; and while some of them appear water-worn, others have undoubtedly been shaped by hand into their present forms. I have picked out several well-defined implements from among them, all being of large size. One is eight inches long by five broad, curved in outline, and combines a point and crescent scraper, chipped in free style. Some resemble plowshares; others huge spear-points, perfectly proportioned with well beveled edges—a feature to which the material lent itself agreeably. These stones sometimes occur singly, but are mainly found in groups of five up to a dozen, and where not disturbed by the plough, are laid flat in series, and cover deposits of smaller implements, as clubs or batons, knives, large points, disks, etc., together with grayish matter worked over by earthworms, which may have been ashes.

In one case a burned bone, evidently a portion of a joint, but whether animal or human is unknown, came to light. All of these objects—the implements—are exceedingly rude, but exist in considerable variety. Some are of flint, but more are of sandstone; and in nearly all cases the material is greatly modified by disintegration and discoloration. Some of those of flint flew to shivers at a blow from my cane. Thick sandstone objects accidentally broken by the spade in removing them, are found greatly decayed on all sides to the core. All are of large size. Nothing so small as an ordinary arrow or spear-point has been found. The ordinary forms of Indian implements are not found over this tract of two hundred acres containing the altar and rude implements. There are club-like forms, one specimen being notched near the smaller end for purposes of suspension. Thin disks occur, one lot consisting of a series of six, one laid upon the other in order of size, all being held well together by the stiff clay, as with cement. Large choppers are here a foot long and half a foot wide, thick at the back and beveled off to an edge on the other side, one specimen having two adjoining depressions on one side near the back, for a finger grip. These choppers, as some of the other sandstones of smaller size, are external flakes struck off a block, and afterward pecked on the thinner edge to a bevel. Most of the flints are of the oval and disk-like forms, thick, and with edge all around. A few are truncated at the base, tapering to a point. The sandstones are mostly of oval form, with flat bottoms, high spines and sharp all round.

A few are formed from quartzite pebbles; and one specimen found in the creek, of the peachstone form, has been pecked from a greenstone pebble.

What are these, and whence? To one familiar from boyhood with nearly all the known forms of tools of the prehistoric Indian, these ruder and larger forms are at once recognized as of a different character by their whole testimony. They cannot, seemingly, be hitherto unobserved residue remaining of Indian manufacture after the gathering of the finer objects from a site. A careful search among the known Mohegan and Mohawk sites, of which there are many hereabouts, fails to show that the modern Indian employed these forms—only in one case, where the sites of the old and new overlap. Nor does it appear that they are unfinished tools. If they were so, where are the finished ones, of which these are the rudiments? Again, would they not be wholly superfluous to a people manufacturing and using the finer, lighter and more adaptable tools that we know the Indian to have possessed? All the more so as they were evidently made to subserve the same end. They seem to be mixed indiscriminately through the boulder clay about the slate ridges here. Some are turned up by the plow, others have to be dug for, and some occur at considerable depth and are brought to light in the cutting of streets and digging of cellars. I have no theory to advance with regard to these finds, but my unprejudiced belief is that they belong to the ancient stone age—the paleolithic, though to a late epoch of that age,

as I have gathered specimens from the river gravels near here, all of flint, and which bear most of the characteristics of the Chellian implements, though somewhat less skilfully made. One more observation before I close. I am persuaded that these evidences of ancient man exist all around us to a greater degree than we suspect, especially in the neighborhood of our lakes and streams, both near the surface and deep beneath it, and that with no more than ordinary judgment and with an eye trained to detect every shade of the artificial upon the stones beneath our feet, the student may be able to recognize and recover many a precious record of man's life in that remote time. O. C. AURINGER.

Troy, N. Y.

PREHISTORIC FLINT QUARRIES IN SOUTHWEST MISSOURI.

One of the most interesting industries of prehistoric Indians in Southwest Missouri, as shown by remains and ruins, was the mining of flint for the manufacture of implements for use in their various avocations in life, either in times of peace or war. When we study the prehistoric Indian of the Stone age we are led to believe that he not only considered well the special purposes which his implements were intended to perform, and the form and shape by which they were best fitted to faithfully fulfill their intended mission, but he seriously and rightfully considered the quality of material from which could be formed implements that would be of the greatest durability and convenience in working quality. This nature had abundantly provided for him, but he had to wrest it from her store-house by his individual efforts, many remains of which are to be found in various localities in southwest Missouri and adjacent localities. Having visited some of them, and they having the same general characteristics, I will endeavor to give a brief description of them.

These remains of old flint quarries are erroneously considered by the resident inhabitants to be remains of old Spanish gold or silver mines; but a careful study of them will dispel such an idea. These remains consist of a series of elevations and depressions of the surface of a hillside, not unlike mounds and pits, the pits being from mere indentations to pits some ten to fifteen, or more, feet deep; the mounds being only a few feet in height, probably owing to the action of time and nature; thus gradually wearing them away and gradually filling the pits adjacent to them. The area covered by them varies with the location of the quarry.

There is one located about seven miles northeast of Seneca, Mo., covering an area of about ten acres; another one located about three miles northwest of Golden City, Mo., covering an area of about one or two acres; and one located about eight or ten miles southeast of Lamar, Mo., covers about four acres. Of those most carefully examined I found the surface of the mounds and the pits covered with flint fragments of a most excellent quality for flaking purposes; many fragments showing evidences of workmanship. I made no excavations, but within an area of one of the excavations has been digged a pit by "prospectors" for "mineral." Upon examination I was able to note that the flint in that particular locality was mostly, if not entirely, found lying between strata. I have not been able to detect any evidence of fire having been used to disintegrate the rocks, although it may have been used. In localities adjacent to the quarries numbers of implement "blanks" and fragments are found.

Many of the specimens are very crude and imperfect, which are probably unfinished or rejected specimens. Where a spring is situated near the quarry its immediate locality can be relied upon as being a fruitful locality for the Indian relic hunter, this being probably the site of the workshop and village.

I have been able to secure quite a number of specimens from this immediate vicinity and find that the material in the most of them corresponds with that found at the site of the quarry; which material is a white, almost flawless, easily-flakable flint. Numbers of axes and other similar implements are found, but they, like the arrow and spear-heads, do not show as perfect degree of workmanship as specimens in many other localities. But possibly this may be accounted for by saying that a great many of them may be either unfinished or rejected specimens, as it was near their work-shops, and no doubt many specimens were rejected or cast aside, to become afterwards lost.

There are other quarries, some of even greater capacity, and covering a greater number of acres, that I have not visited.

These quarries have been found in the Indian Territory and in Arkansas, which probably do not differ greatly in general characteristics from the description given above, as the localities are lying adjacent and are somewhat similar in geological formation.

The above brief description is given, describing the quarries as I saw them, and only for a short time, and is not perfect in description; but is, as was intended, only a brief outline or description, which may be the means of urging others to a more complete investigation of what I consider one of the most important industries of prehistoric man in America. J. M. Brooks, M. D.

Golden City, Mo.

[Several years ago we examined a series of ancient diggings in the northeastern portion of Polk county, extending into Dallas county, in southwestern Missouri; fifty miles, or more, east of the locality mentioned by Dr. Brooks. The old quarries were along the rocky bluffs of one or two small tributaries of the Osage river, and in the outcrops of subcarboniferous limestone, resting upon massive magnesian limestone of the Silurian age. The many pits, some of them still from three to six feet in depth, with their corresponding heaps of stony debris near by, all overgrown with large forest trees, were conclusive evidence that quite extensive quarrying had been conducted there, for a considerable length of time, at some period in the remote past.

The prevailing opinion in the sparse settlements of that region, at the time, attributed the labor expended there to "the Spaniards," who were credited with an instinctive knowledge of the existence of silver ore in the earth; or with that intuitive faculty for discovering it that some peculiarly gifted persons have for finding subterranean streams of water with a forked switch. A few there were, however, who had read something of the early movements of the French in the Mississippi Valley, and concluded, very plausibly, that the digging had been done by the employes of Renault, who, located with his 500 slaves at Fort Chartres, above Kaskaskia, in the Illinois territory, sent his agents all through the Indian country south of the Osage to prospect for mineral.

On investigation, the nodular masses of cherty flint intercalating the limestone stratas, and the profusion of flint chips and fragmentary flint implements scattered around, were convincing proof that this was the mineral sought, and that the ancient miners who utilized it and knew its value were Indians.

In his reports of the first Geological Survey of Missouri, Professor G. C. Swallow mentions "old diggings" occurring in different parts of the state, and says of them; "we were convinced they were made by the Indians in search of flint, the most valuable mineral, in an economical point of view, known to them."

We are under obligations to Dr. Brooks for his interesting account of the prehistoric flint mines of his locality; and we will be very grateful for further information, from any quarter, relating to this important branch of primitive Indian industry. Ed.]

NOTES ON DELAWARE INDIAN VILLAGE SITES.

No. 5.

One-half mile north of sub-camp site or ward number three, is Durham cave. This cave and its relics are intensely interesting because of bearing on the antiquity of man in America,[1] and its central position in this extensive prehistoric village site will not be misnamed by calling it the main or central ward, or number four.

We will endeavor to herewith give as brief a description of this interesting bone cave and the fossils and relics discovered in its gloomy recesses as we possibly can.

The cave is located a little north of Durham creek, and not far from the Durham iron works. It is in the steeper portion of the anticlinal arch of the limestone exposure, and in its primitive condition had a length of about three hundred feet, trending southwest by south; about twelve to fifteen feet in height and twenty feet in width. The entrance to the cave was at an elevation above the Delaware river of at least sixty feet, partly obstructed by a ledge of limestone running transversely across the opening, allowing only two or three persons to enter abreast. It consisted of three main departments with several lateral caverns leading east and west; also several rooms elevated above the cave floor a height of about twelve feet. These rooms were named "Queen Esther's rooms."[2] They were composed of enlarged passages opening into opposite rooms of from ten to twelve feet wide, and probably ten feet high, ending in a narrow undefined fissure.

Each apartment or level was from ninety to one hundred and twenty feet in length, and lead with a steep incline of about ten feet in depth into the next room or level. All the apartments or levels were partly obstructed by limestone ledges running transversely across the opening. At the extreme southern end of the cavern is an excellent spring of good water, the temperature of which registers fifty-six degrees summer or winter.

Professor H. D. Rodgers, chief of the first Pennsylvania geological survey, in 1845-46, while engaged on the survey in Durham, Bucks county, Pennsylvania, visited the cave, and finding numerous fossilized bones in it, collected several boxes of them and shipped them by stages to the Academy of Natural Sciences at Philadelphia, where they remained stored away until the writer called

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[1]The Antiquity of Man in the Valley of the Delaware will be fully discussed in a separate paper, immediately following the completion of the present series of papers. Since working up our field notes, in preparing the series now being put out in The Archæologist we find so much material pointing to undoubted facts, and finds of man's great antiquity in this valley that we have concluded to place it aside for a separate series of articles, which, if not conclusive to the average theorist in the study of ethnology, will, however, show to the plodding, thoughtful, practical field archaeologist that man of a rude type once existed in this valley, and slowly evolved to a more advanced status.

[2]Queen Esther's rooms, so named after an Indian woman, or "Catharine Montour," who was known to the English as "Queen Esther." She is known to have visited the Indians inhabiting Pechequeolin, when on her way to Philadelphia, and it is probable that during these visits, she may have spent some time in the cave and thus her name became connected with the rooms. Professor H. C. Mercer in September, 1893, explored the so-called Queen Esther rooms in the hope of finding some significant archaeological facts relating to primitive man. Among the numerous and instructive finds was the discovery of the bones of the extinct peccary, mylohyus Pennsylvanicus, mingled with the remains of still existing animals. The remains of this animal differing from those of existing species, this find is of especial interest in view of its being contemporary with the tapir, the mastodon and fossil sloth. At Hartman's cave, fifty miles up the Delaware river, Mr. T. D. Paret found a peccary identical in species with the Durham cave animal.

the attention of Dr. C. C. Abbott, of Trenton, N. J., and Professor H. C. Mercer, of the museum connected with the University of Pennsylvania, Philadelphia, to the fact, in the spring of 1887. Dr. Abbott and Professor Mercer were then in the vicinity of Durham exploring the Durham jasper quarries, piloted by the writer. After the return of Dr. Abbott and Professor Mercer to Philadelphia, they proceeded to the Academy of Natural Sciences, and with the aid of Professor Joseph Leidy, of the academy, the following animal remains were identified: Black bear, ursus Americanus; raccoon, procyon lotor; gray fox, vulpes cinereoargentatus; skunk, mephitis mephitica; woodchuck, arctomys monax; porcupine, erithizon dorsatus; beaver, castor fiber; muskrat, fiber zibethicus; gray squirrel, sciurus Carolinensis; woodrat, neotoma Floridana; gray rabbit, lepus sylvaticus; deer, cervus Virginianus; elk, cervus Canadensis; moose, alces Americanus; wild turkey, meleagris gallopavo; box-turtle, cistudo clausa; snapper, chelydra serpentina; snake, entaenia sirtalis; sturgeon, acipenser sturio, and catfish, amiurus atrarius.

The writer remembers when a boy visiting this cave and finding numerous bones of man and beast lying around, besides stalactites depending from the roof of the cave; also fossilized cherry pits in the stalagmite cave floor.

Many of these fossil bones and cherry pits, bones of fishes, bats and other reptiles were sent to eastern Pennsylvania in care of Dr. Swift, and by him placed in the museum in Pardee hall, connected with Lafayette college.

Numerous fossil bones, horns of beasts, teeth, skeletons of men and animals were carried away by the numerous visitors to the cave. During our boyhood days this cave was the rendezvous for numerous parties, some driving a distance of forty miles or more. Especially was this the case during "Indian summer" and on Sundays. Many of those who visited the cave were interested in science, which at that time was all Greek or Hebrew to us; but later on we remedied that part, by storing our own brain with those essential languages. As late as 1856, fossil animals were discovered, while the workmen were at work demolishing the cave. On one occasion William Walters, of Pingelsville, this state, was standing by, watching the progress of cave destruction; when, immediately after a heavy blast which tore away a large portion of stalagmite, he saw the skeleton of a large sized animal firmly imbedded in the rock in a standing position. A few days after, he informed the writer, but the curiosity seeker got ahead of us and the bones now grace the collection of another.

Numerous axes, celts, hammer stones, arrows and spear-points were picked up in this cave. Along the west side of the interior of the cavern, in the first apartment were four or more fire places, so arranged that the smoke curling up from the fire found exit through openings in the cave roof. The openings were produced by the crumbling of softer strata or seams in the limestone rock, and the percolation of surface water through them during the vast ages supervening, before the advent of primitive man.

In the fall of 1893, Professor H. C. Mercer made an exhaustive exploration of the cave, the results of which are of incalculable value to archaeology and are printed in the publications of the University of Pennsylvania in volume six.

About one hundred yards west of the cave was located the observation camp, overlooking the "Durham bone cave," and a portion of Pechequeolin. (Pechotwoollenk, where there is a great depression of land.) At the observation camp site we found six cooking or circular mounds, composed of burnt stone, imbedded in ashes and loose soil; also knives of jasper, argillite, etc. We discovered no hammer stones or other implements at this sub-camp, although we often looked for them when passing over the "old trodden trail."

Riegelsville, Pa. CHARLES LAUBACH.

CENOTES.

The assertion of Dr. J. Miller in his interesting and acceptable article in the November number of the The Antiquarian, entitled "Montezuma's Well," that this is the only one of its kind known to civilized man, causes the writer to place before his readers a short account of a few similar natural reservoirs; although not as large, situated in the southern part of Mexico, in Yucatan.

In the ancient Mayan city of Chichen-Itza can be seen two of these remarkable freaks of nature, the smaller called the Sacred Cenote; the larger the Cenote Grande.

I quote Mr. W. H. Holmes, who in his admirable production, "Archaeological Studies Among the Ancient Cities of Mexico," which is the result of a three months' excursion into the interesting states of Yucatan, Chiapas and Oaxaca,[1] pages 136-37, says: "The former was probably a chief source of the supply of water that made the development of Chichen possible, and the imagination is wont to picture the trains of tireless carriers moving, almost without ceasing, up and down the steep pathway and back and forth in the city. This great well is some seventy feet deep and averages perhaps 150 feet in diameter.* * * * The pool which rests calmly at the bottom of the pit is shallow at the side next the steep pathway where the walls are most broken down, but in the center and against the perpendicular wall is of unknown depth. The water is at present sufficiently pure to serve for drinking and culinary purposes; but its taste is naturally affected by the vast accumulation of vegetable matter swept into the gaping orifice each year. No current is perceptible and if there is any connection with a subterranean stream it is by seepage merely, the errosive agencies not being sufficiently active to clear away the accumulation of debris descending from above.

"The Sacred Cenote is larger and more symmetrical than the other, and, occurring in the midst of the somber forest, is a most impressive and awe-inspiring spectacle. Its charm is enhanced by the weird stories of human sacrifice associated correctly or incorrectly with its history.

"The walls are nearly circular and approach the perpendicular closely all around. They are diversified only by the encircling ribs and pitted grooves produced by the uneven weathering of the massive, horizontally imbedded limestones.

"The water has a light coffee color and looks very impure. It is shallow on one side and of unknown depth on the other. A small, tomb-like ruin is perched upon the brink.[2] It is conjectured that this structure had something to do with the ceremonies attending the casting of victims and treasure into the terrible pool."

Desire Charnay[3] draws so vivid a pen picture of the offerings consecrated to this sacred and, at the same time, terrible well, that I can not help but give the story to my readers, who, I am certain, will read it with avidity:

"Hither pilgrims repaired, and here offerings were made; for Chichen was a holy city, and among her shrines the Cenote held a conspicuous place, as the following passage from Landa will show: 'From the courtyard of the

[1]This publication was issued in two parts by the Field Columbian Museum, at Chicago, Ills.

[2]See figure two in Dr. Miller's article on page 283, where in a niche near the top of the well is to be seen a building in ruins which may have served the same purposes. Perhaps similar rites were enacted here.

[3]The Ancient Cities of the New World, page 353. He quotes from Bishop Landa: Relacion de las Casas de Yucatan, sec. LII., page 346.

theatre, a good wide road led to a well some little distance beyond, into which in times of drought the natives used to throw men, as indeed, they still do—1560—as an offering to their deities, fully believing that they would not die, even though they disappeared. Precious stones and other valuable objects were also offered; and had the country been rich in gold, this well would contain a vast quantity, because of the great veneration of the natives for it. The green color of the water is due to the foliage. On its banks rises a small building filled with idols in honor of all the principal edifices in the country, exactly like the Pantheon in Rome.'"

M. Charnay made an attempt to recover some of the treasures contained in the well, but could not, owing to the height of the walls, the depth of the water and the accumulation of earthy matter which has been falling in for several centuries.

Near Chichen is another important well, known as Xcolac, shaded by beautiful trees and full of fish. Its water is cool, fresh and pure. No buildings have been erected around it. The course of these natural depressions is fully described by Desire Charnay as follows: "Although Yucatan is uncut by rivers or streams, an immense sheet of water and ill-defined currents occupy its under surface; these waters are near the surface along the coast, but low down in the interior of the peninsula, where the calcareous layer is of great thickness. Localities where these waters can be reached, whether through the natural subsidence of the soil or artificial pits, receive the name of cenote. When the water flows at a slight depth, and the calcareous layer has only been partly eaten away, there follows an irregular sinking which forms a cave open from side to side, but when the crust is thicker, and the stream has a regular course, the soil is generally corroded in a circular space; and the vault thus formed lacking support, falls in, when an immense open well is made, as for instance, at Chichen-Itza. Often the crust is so deep that the soft parts only crumble down or are carried away, leaving frequently a small aperture towards the top, fashioning a real grotto with stalactites and stalagmites. It sometimes happens that the calcareous crust is exceedingly thick, when a gigantic subterraneous passage is formed."

All archaeologists should read the very interesting work, "The Hill Caves of Yucatan," by Henry C. Mercer. He, in a learned and attractive manner, describes these underground cenotes or caverns, many of which were explored by him, in search of an ancient man other than the red Indian.

Allentown, Pa. A. F. BERLIN.

[1]Ibid. pp. 290-91.

SO-CALLED DRILLS OR PERFORATORS.

Ten years ago I became interested in the long, slender, chipped implements called drills, or perforators. Interested from the fact that although I called them drills I failed to find one among the large number passing through my hands that showed any signs of having been used as a drill or perforator.

It would, I presume, be possible to drill a hole in a piece of soapstone, or steatite with the slender flints, providing the flints were straight, and extreme caution was used in the drilling. But when the flints were curved similar to the so-called fish spears, I could not understand how the implement could have been used as a drill, after a few arguments with local collectors about the probable use of the implements. My interest increasing as I gave the matter consideration, I came to the conclusion that I would collect as many of these so-called drills as possible, and if I could find one or more that showed unmistakeable signs of having been used as a drill, I would accept the conclusion of collectors generally, and consider these implements as drills or perforators pure and simple. In all my twenty-five years of experience in collecting and dealing in flint implements I have failed to find a single specimen that would lead to the conclusion, on my part, that these implements were drills or perforators.

I have had a number of small slender flints that range from one inch to one and one-half inches in length, with polished ends, ground and polished from long use From the size and the shape of the polished end I came to the conclusion that they were used as markers in decorating pottery, and in the seaming of skins when the skins were being made up into moccasins and other wearing apparels.

I have had several copper implements made in every way similar to the long, slender flint implements; but being very pliable and hardened only by compression (hammering), I know that they could not have been used as drills; but they gave me the first real proof that my conclusion as to the actual use of these implements was correct.

I had determined in my own mind, from the start, that these long, slender flints, with their broad notched bases, were neither drills, perforators or projectile implements, but hair pins.

This conclusion has been greatly strengthened by my securing the same forms in bone and shell, and also in the beautiful flints numbered 1 and 3, shown in the illustration.

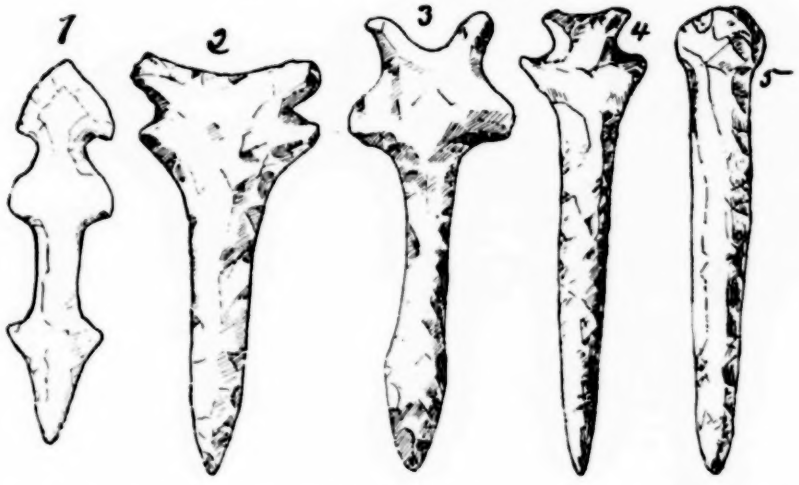
No. 1 is made of clear, transparent quartz, or possibly of a large crystal, and is two and seven-eighths inches in length.

No. 3 is a fine piece of work made of jasper, of a dark red color, and is three and three-eighths inches long.

I would call the reader's attention to the barbed point of No. 1, and the enlarged point of No. 3. Nos. 1 and 3 were found in Wisconsin.

I consider that these flints belong to the class of implements called drills or perforators, but I fail to understand how they could be used for the purpose of drilling. If they were used as hair pins, or ornaments for the hair, the barbed point of No. 1 and the enlarged point of No. 3, serve the purpose effectually of preventing the implement from falling out of the hair and becoming lost.

Figures No. 2, 4 and 5 are of the more common forms of the so-called drills or perforators. No. 2 was found in Washington county, Indiana, and is three inches in length and is made of dark-colored flint.



No. 4 is four inches long and is made of jasper of light yellow color; as is also No. 5, which is four and one-eighth inches long. These two flints were found in Gordon county, Georgia.

A Mr. Tibbits, a full-blooded Sioux Indian, when examining my collection, stated that he had seen implements similar to Nos. 1 and 3, made of wood, in actual use as hair pins by some of the old people of his tribe. He said that there were bunches of gaudily colored feathers and other articles fastened to the base of the pin, the pointed or barbed end thrust in the long, braided strands of the hair close to the head, the whole making a very showy ornament for the head.

The long, slender implements are rarely found on the surface. They are found in graves or mounds, all finely chipped. Nearly all of them are made of material evidently selected for its fine colors. Their makers seem to have done on them some of their best work in the art of chipping flint and stone.

390 Worthington street, Springfield, Mass. G. M. SHERMAN.

CUPPED OR PITTED STONES.

Reading with interest the article on "Cupped or Pitted Stones" in the October number of The Antiquarian, and being interested in the study of these implements, I thought, perhaps, that a description of those found in this vicinity might prove to be of interest to those engaged in trying to determine the solution of this problem which confronts all true archaeologists at the present time, namely: What were these peculiar implements used for?

It is the general opinion of archaeologists, I think, that these stones were used as hammers. The objection offered by Mr. Fountain, that the majority of these stones found in his vicinity are brown sandstone, and consequently too soft to be used for that purpose, is very reasonable and very hard to be refuted, especially by one who is not acquainted with the geological formation of that immediate neighborhood. If there were harder substances within the reach of the Indians, and they then chose the brown sandstone, it is evident that they were used for some purpose other than Hammerstones.

It is, however, a fact worthy of notice that the "cupped or Pitted Stones" found in this vicinity were made from the hardest material found here that could be easily handled for this purpose, and have nearly all been selected from the "Columbian Gravel."

My collection of these peculiar stones is not quite so large as that of Mr. Fountain; but in studying what I have and what I have seen in the collections of others, I have noticed one peculiarity about these stones that may, perhaps, be the means of proving why the edges of these stones are not battered. Those stones whose peripheries show no battering whatever are invariably of such a shape as to make it difficult to strike a blow with the edge of the stone; hence, these stones, instead of being held in such manner as to strike with the edge, were held squarely in the palm of the hand and were continually struck at one place, or nearly so, and the natural consequence was a cupped or conical-shaped depression in the center of the stone.

But the question may be asked: Why do not these Hammer-stones, whose edges are used, have these depressions in them?

There may be different reasons for this, the one most generally accepted being because they are not held in one position long enough to wear holes into them; but because of their shape are constantly turned so that each blow will fall on a different place from the one preceding, and in this manner the whole stone, or at least the peripheries, are battered. Or it may be possible that these cupped stones were used as hammers only when pounding upon the end of a chisel, which would have the effect of forming these depressions, while the other hammerstones were used for other purposes.

I recognize the fact, however, that very many objections can be brought up against these ideas. For instance, I have in my collection several stones that were evidently used for the same purpose as these Cupped Stones, and yet, instead of a deep depression in the center of the stone, the whole surface is pecked, undoubtedly in the same manner, and with the same implement as the Cupped Stones.

As to their being lapstones or anvils can hardly be possible, because we find them so small that it would be practically impossible to hold them, or if that were possible, they could not offer resistance enough, on account of their size, to break or chip such hard substances as those from which their arrow-points and other implements were made.

Mr. Fountain asks if these stones could have been used as fire producers.

Recognizing the fact that fire is, and always has been, a universal necessity and that wherever men have been learned in the stone art have been found these "Cupped or Pitted Stones," there is, perhaps, a possibility that there may be some connection between the two; and yet if those stones found by Mr. Fountain were too soft to be used as hammers, they would hardly be hard enough to be of any practical use as fire producers; while at the same time there was plenty of material at hand (jasper, flint, etc.) that would be much more useful in producing fire than the material from which these cupped stones were made.

That this is an important question for archaeologists to solve, is beyond a doubt, and I think that Mr. Fountain has taken a step in the right direction.

Let all who are interested in this important subject give their views on the same, and by so doing and comparing with others, we may be able to arrive at some definite conclusion and thereby be able to correctly classify this peculiar and interesting implement used by the primitive inhabitants of our country, and of every other country that can boast of being inhabited by people versed in stone art.

HARRY J. IVEY.

Raubsville, Pa.

CORRESPONDENCE.

American Archaeologist:

The story about Welsh people having settled among our early Indians, or of western Indians speaking a language conforming with the Welsh of Wales, has turned up a hundred times or more, and evidently rests on the tradition that a Welsh chief named Madoc, or Medoc, came over at an early day and settled here; but it cannot be traced to any historic source. The cause of all this is the similarity of the names Madoc and Modoc. The Modocs had, and have still, a few homes or farms on the northernmost border of California. I have investigated the Modoc language thoroughly and published two big volumes about it, "Contributions to North American Ethnology, of J. W. Powell, Washington City, D. C., 1890," and can say, according to truth, that this language has no affinity to any European or Celtic language (the Welsh is Celtic), neither in its phonology nor in the lexicon, structure, rythm of poetry, or anything else. So it would be pure loss of time to investigate that matter again—just as much as to discuss the name of "America." Modoc means Southerner; but I doubt very much that Madoc means the same, or anything alike to it. ALBERT S. GATSCHET.

Bureau of American Ethnology, Washington City, D. C.

The American Archaeologist:

Mr. Warren K. Moorehead, in his interesting paper appearing in the January number of the Archaeologist, refers to certain bored crystals found in the Hopewell group of mounds, and asks how the drilling could be done.

The answer is simple in one sense, and may be given in five words, "With a stick and sand." In other respects the answer may not be so simple, for the size and character of the hole may make a great difference. As a reply, however, to this question, in its broadest sense, it may be said that any sand which will scratch an object, when used with wood, will bore a hole in it; second, crystal, crushed, will cut slowly; but if emery is employed, it will cut more rapidly. The number of revolutions to the drill makes every difference in time required to complete a given task. If the object to which Mr. Moorehead alludes antedates white influences, the shaft drill revolved on the knee or between the hands would be used. The whites brought with them the principle of the strap and pump drill, apparently. J. D. McGUIRE.

Ellicott City, Md.

American Archaeologist:

I worried along very uneasily since reading, in the March number of The Antiquarian, your statement that the dog was acquired, along with the variegated stock of vices, by the North American Indians from the early European visitors to this continent; and it came something like the lifting of a load from me when I read your (tardy, but frank) correction of yourself in the Antiquarian for December.

Your reference to the experience of Cabeca De Vaca with dogs as a diet, prompts me to offer the additional testimony of observers in the early part of the sixteenth century, which shows that the Indians were familiar with the dog; and also that the Muscogeans and Iroquoians were slightly more choice and dainty in their selection of food than were their Spanish conquerors.

In the account by the Gentleman of Elvas, of De Soto's expedition (Haklnyt's Voyages, Vol. II, p. 275), it is stated that: "The Cacique sent him (De Soto) two thousand Indians with a present, to-wit: many conies and partridges, bread and maiz, two hens and many dogs, which among the Christians were esteemed as if they were fat wethers, because of the want of fresh meat, etc." And on page 584, of the same volume, we read: "Within five daies the Governor (De Soto) came to Guaxule. The Indians there gave him a present of 300 dogges, because they saw the Christians esteemed them, and sought to be fed on them; for among them (the Indians) they are not eaten."

And again, at the closing summary of the Elvas narrative (Haklnyt's Voyages, Vol. III, p. 58), the following list of animals is given: "There are in Florida many Bears and Lyons, Wolves, Deere, Dogges, Cattes, Marterns and Conies."

At an exactly concurrent date (1540-'42), Gomara observes, at the conclusion of his account of the Coronado Expedition (Haklnyt's Voyages, Vol. III, p. 137): "There are also great dogs which will fight with a bull, and will carrie fiftie pound weight in sackes when they go an hunting, or when they remove from place to place with their flocks and heards."

I have been looking for years for a copy of Buckingham Smith's, or any other English version of Cabeca de Vaca's narrative; and will be much obliged to you, or any of your readers, if you can give me information by which I can secure it.

St. Louis, Mo., 4527 Cook avenue. C. A. PETERSON.

INDIAN PLAYGROUND.

So Named by Early Settlers.

To the American Archaeologist:

About six miles south of Waynesburg, Pa., is what is locally known as "The Indian Playground." It is situated on a high hill and on the flat summit of the end of a projecting ridge. It is situated near the Great Warrior Trail, of which I may write hereafter. This trail leads from the Ohio river at Moundsville, W. Va., to the Monongahela river, and can now be readily traced through field and forest. The only features, to me, are the pavement and the large pile of stones on the southwest corner. The stone pile resembles a cairn. It has been disturbed by rabbit hunters so much that no surface examination can lead to any definite conclusion.

The strange feature is the pavement. It is very nearly the exact form of a parallelogram, 73 feet wide and 205 feet long. These measurements were taken by stepping, and are not given as accurate. Each line of the boundary is straight. It is practically a bed of stones lying closely together over every square foot of surface. The entire surface is slightly elevated. I paid it my first visit last week. While there I was lead to believe that this elevation could have been caused by continually plowing the soil away from it. As I came away I viewed it from hills two and three miles away and now think the elevation is too great for such a theory.

Different attempts have been made to plow it, but all failed. The surrounding fields are not stony. The near land is not even gravelly. The surface is now tufted with grass, but during dry seasons it becomes a parched desert. So smooth is it in places that buckwheat and other grains are threshed on it. No evidence could be seen by me of any Indian village in the vicinity.

Tradition says that this place had no timber on it at the time of the first settlement here by whites. What is it, and how shall I examine it?

Waynesburg, Pa. A. J. WAYCHOFF.

To the Archæologist:

The unwritten history of the aboriginal people of this region, gathered from the ancient shell heaps, cemeteries and mounds now being examined and investigated by our eminent scientists, is resulting in volumes of most valuable and instructive literature. The reports of these late explorations have given a wonderful impetus to thought and interest in that direction, and many who hitherto paid little, if any, attention to the study of American antiquities are now enthusiastic readers and investigators. I find myself eagerly taking note of shell heaps and mounds that a while ago but casually attracted my notice; and now it has become to me a source of pleasant recreation from business and a genial and instructive pastime.

Near the southern extremity of Lopez island, belonging to the Vancouver archipelago, is a small nook or cave, well protected from wind and storm by surrounding headlands and forests. The tide-flat there is bristling with shell fish of various kinds; the rocks adjoining are the home of myriads of sea-urchin and huge mussels; the water is teeming with the finest of fish, and the beach lined with drift-wood, all combining to make this spot an ideal Indian paradise. The shore line of this cave, above the tide-washed beach, for more than a hundred yards is heaped with burnt shells, interspersed with bones, ashes, and other camp refuse, accumulated here in the course of perhaps centuries of time; for it seems to have been a favorite village site of prehistoric Indians as well as of recent Indians, for ages past.

About a year ago, in the erection of a Salmon cannery, it became necessary to cut a ditch from the water line through this mass of decayed shells. In the process of this work two skeletons were exhumed from the shell heaps, one being that of an Indian, presumably; the other that of a dog. They had been buried there together and, judging from their appearance and state of decay, they were deposited here at a very remote period. The bones, with exception of portions of the skull, crumbled away on exposure to the air. The animal's skeleton was that of a medium-sized dog—possibly wolf—too large for a fox; and its cranium a little larger and nose more pointed than that of a common cur. I regret very much that I did not secure and preserve this interesting relic at the time; for it might, if submitted to the scrutiny of a comparative

anatomist, have shed some light on the domestication of the wolf by pre-Columbian Indians. When I returned to look for it I could nowhere find it. The human remains were probably of a female, small in stature, with the skull not artificially compressed, as is usually the case with skulls found here of later Indians. All appearances indicated conclusively that these bodies had been buried here long before contact of these natives with the whites. In enlarging the water ditch this past summer another human skeleton was found nearer the surface of this shell heap, in excellent preservation, and evidently a much later interment. It was buried here, no doubt, to save the labor of digging a grave in the surrounding stony soil. The skull of this skeleton, which I secured, was flattened in front, as are, or were, those of recent Flat-head Indians, who were quite numerous here half a century ago. It has been nearly that long ago that these Indians abandoned this barbarous custom; though I have, since my residence here, met several living specimens of these artificially flattened heads. The depressed forehead does not seem to injure the brain, and though it disfigures the individual somewhat, it is not very noticeable on account of the heavy shock of coarse hair that covers it. The shell heap mentioned is composed in the main of clam and mussel shells of species now found on this coast, all showing the effects of fire and great age; and the bones found intermingled with them are those also of existing species of animals and birds of this region, such as the deer, coon, bear, seal, water fowls, etc., with those of different fishes. Very few stone implements, and no vestige of pottery, have been found in this debris. I have nowhere heard of pottery found on these islands, and in consequence infer that the fictile art was unknown to the ancient inhabitants of this region. The finding, in this vicinity, of two copper cups and a thin, fish-shaped ornament of copper, would seem to indicate their knowledge of that metal; but these objects may have been of later introduction.

I made a casual examination of another shell heap, similar to this one, situated on the adjacent island of San Juan, but found nothing of additional interest. No skeletons were here discovered, but a few broken bones that may have been human remains. The composition of this refuse heap was similar to that on Lopez island, intermingled with identical animal bones, clam and cockle shells, and innumerable sea-urchin skeletons, all more or less burned and much decomposed. The great quantity of sea-urchin remains here leaves no doubt that this radiata, growing in these waters to a gigantic size, formed an important item of food of the early natives of these shores. Here too, in this old camp refuse, was a strange absence of pottery, and of implements or utensils of any sort. This may point to a very low cultural status: to a time before the evolution of the simplest mechanical arts among the primitive people who subsisted upon the products of these waters and forests. On the other hand, no evidences of cannibalism have been observed here. One thing seems quite certain—that the Indians of this region were never driven by hunger to taste human flesh, as perhaps no place on the face of the earth, except on some of the South Sea islands, has the Great Spirit provided his children so bounteously as on the islands and shores of Puget Sound. Here the Indian, in his canoe or ashore, found every tide-flat strewn with the choicest shell fish; the submerged rocks alive with a profusion of marine creatures of many species, and the beach piled with drift wood ready at hand for his fires. In their seasons, millions of water fowls nested on the small islands, and their eggs were in such quantities that they could be gathered by the canoe load. The waters at all times teeming with myriads of fish easily taken with the simplest devices; game animals, such as deer, were in the greatest abundance and easily approached, and the climate mild and invigorating. No skill or labor was requisite to sustain life but in manufacturing weapons and canoes; and a canoe once made would last a life time. So we must infer that up to the time of his contact with the white race, the Puget Sound Indian lived in plenty, indolence, ignorance and filth. Nature lavishly supplying all his simple wants, he had no incentive to either mental or physical exertion; and certainly not the least inducement for the practice of cannibalism.

I will be pleased to have those disagreeing with me on this subject express their views in the American Archaeologist, and hope that the assertions I have here made will have the effect of bringing to light any traces of cannibalism among the prehistoric Indians of the Northwest, if such evidences have been, or may hereafter be, discovered.

Friday Harbor, Washington. WM. H. THACKER.

1262 New Hampshire Avenue,
Washington, D. C., Jan. 17, 1898.

Editor of the American Archæologist:

In your issue of December, 1897, p. 334, you quote Professor Hough, of this city, as saying of a ruin which he has recently explored in Arizona: "It was known in the Zuni language as 'Kin Tiel,' meaning 'broad house.'" The name Kin Tiel, or, as I prefer to spell it, Kintyel, is not a Zuni but a Navaho name. In the latter language it signifies broad house, and is derived from kin, a Pueblo dwelling (not a Navaho hut), and tyel, broad. The Mexicans have rendered the name into Spanish as Pueblo Grande, and in this form it appears on several maps. WASHINGTON MATTHEWS.

Editor of The American Archæologist:

I take no periodical that I read with more interest than I do The American Archæologist. I learn something new every month from it.

I have a great variety of very scarce stone objects, few ever heard of; but just at this writing, as I sat reading two articles in the January number on "Cup Stones," the thought struck me, What a diversity of opinions are promulgated as to the use of "cup stones!" Mr. M. C. Read, on page 14, has "a cart load of them," and all of rough sandstone, and thinks they may have been used to crack nuts upon.

Another writer thinks they may have been used as pivot supporters of rotating firesticks or boring drills. I have never known what they were used for. Either theory is as good as any advanced by the best writers and archæologists. But what I am getting to is a cup stone I just received from near Little Rock, Ark. It is the exact shape of a dice, cubical, and one cup on each side of the six sides, and the cube about two inches across every side. It is complete as made, and used, and is old and worn in appearance on every surface. So small a size and shape could not have been used for a nut-cracker. It might have been used to head a drill, but I doubt if any of us have solved the problem satisfactorily to anyone, where so many sizes and conditions are found. I have one cup stone 5x3x2 1-2 inches, of sandstone, with cups on the six surfaces—one side three large, deep conical depressions, opposite side two, ends one each, and being broken off at one corner, two sides cannot be determined whether two or three cups. I can count ten of these semi-spheres sunk in the six sides. There were probably twelve. The depressions are from one-half to seven-eighths inch deep. I have a cup stone of quartzite 5 1-2x5 1-2 inches, irregular shape, and 2 inches thick, smooth on all sides, three nice cup-holes on one side and two tiny depressions on the other side, in the middle of a wide hollow. No other depressions of a like character on the stone. This is from Missouri.

With the variety of sizes of the stones, and number and sizes of the depressions, one is puzzled, and when he fits a theory to a large cup stone he don't know what to do with his theory when he sees a small cup stone, like my dice-shaped one.

I throw out these suggestions and facts in comparison as a matter of interest and study. Truly yours,

L. W. STILWELL.

Deadwood, South Dakota.

Editor American Archæologist:

I know you have no space for personal controversies. Neither are your readers interested in them. I trust, however, you will allow me to make a brief reply to the trenchant criticism of my article in the October Antiquarian on the "Digger Indians of California." This criticism appears in the December number, over the name of H. C. Meredith.

I think if Mr. Meredith had read me with more care, his criticism would have been less poignant. I forgive him for his personal thrusts, as he said, "I write in haste." He might have seen that I wrote not of any Indians he is acquainted with. What I wrote is corroborated in all essentials by cotemporary writers.

The Indians I attempted to paint, were those of a rancheria near a mining camp called Cedarville, on the extreme southern line of El Dorado county. I have read my article over several times, and can find no correction to be made.

I said, "I don't think they made or used flint or stone arrow points." Others saw other bands that did make and use them; so my impression on that point may be erroneous; but not necessarily so as to those that came under my notice. As to the "copper color," I may be color blind. If not, they were of that hue. Mr. Meredith's "wavy haired" Indians must have some negro blood in their veins, which is not uncommon among the Mexicans and Indians along the lower coast of California. It was not of those that I wrote. I did not say they wore no ornaments. (Read the article again.)

In my paper, that has been so recklessly slashed by Mr. Meredith, I said, "This description does not fit in all respects the different tribes classed as Root Diggers; but is a fair, epitomized description of those that inhabit, or did inhabit, the lower mountain ranges or foothills of the central part of the State of California." In the face of this explanation he feels justified in presenting models of Indians in a part of the state two hundred miles away in the coast range, who have lived under different conditions, and have had forty-eight years of civilization to subdue their vile instincts and tame their savage nature.

His eulogistic description of the Indians of Mendocino county, if applied to the Indians I described, would be vastly more misleading than my description would be, were it applied to the Mendocino county Indians, of whom I have not written.

I have not misrepresented nor traduced those of the California Indians I know most about. I certainly have not eulogized them. I have written truthfully as I saw them; and cannot truthfully modify one syllable contained in that paper. I have written nothing in malice; naught have I extenuated. I have had no controversy with them,

but have failed to see any noble traits in those I described and cannot use white paint to portray a dark character.

I have been in favor of dropping the name of "Root Digger," not because it degraded the Indian, for it was the Indian that degraded the name, but because I thought it a misnomer (see my paper in the November Antiquarian). But as Mr. Meredith has proved that he is a root digger, I can see no reason for a change of appellation, for it would pervert history to do so.

I have not erected a standard and then painted an Indian to fit it, but have painted him truthfully, as he posed before me in El Dorado, Placer and Nevada counties, California, in 1849-50 and '51. If truth and accuracy are potent factors in history, Mr. Meredith's portraiture will not do for all the aboriginals of California.

FRANCIS C. PORTER.

Editor of The American Archæologist:

In the January number of The Archæologist you picture an image from Georgia. In the description, you say editorially, that no instance of a head with the hair confined in a net is known in the United States. On page 414 of the paper sent to you,* you will see (No. 43) a rather rude head, one half size, from Nagoochee, Georgia. This head I received from its finder about 1886. It is a dense red stone, and seems very old, as it is extremely weathered. Over the top of the head, from ear to ear, pass four lines parallel, which are covered by eight or ten lines at right angles, making a perfect net, whose squares are nearly equal. The back of the head is nearly flat, and either was never worked into much of a shape, or else has been worn off. It is difficult to say which. The head is pretty roughly made at best, and the right side of it is badly weathered and less perfect.

Bristol, Conn. F. H. WILLIAMS.

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* This will appear in a future number.

NOTES AND NEW DISCOVERIES.

About three-quarters of a mile from Wheelersburg and ten miles from Portsmouth is a wood of native timber, containing about fifteen or twenty acres. The Norfolk and Western railroad runs almost directly through the center of the tract and the waters of Pine creek form the southern and western boundaries. It is one of the finest natural groves in the country. The trees are mammoth in size, consisting of oak, poplar, sycamore, ash, hickory, cottonwood, elm and beech. The woodman's ax has been spared from time immemorial, due to the fact that the waters of Pine creek shut it off from the main body of the farm, and it was not needed for the purpose of cultivation. Its entire primitiveness or naturalness with its umbrageous shade makes it a "deep and dark and pathless" wood. For many years it has been a favorite resort for large picnic parties, known all the country round as "Pixley's Grove," owing to the fact that the farm of which the woods were a part belonged to a family named Pixley, since early in the present century. The "King of Poplars" of the Ohio valley stands in this grove, being fifteen feet in circumference and about sixty feet to the first branch, and whose topmost limbs are the first to salute the rising of the sun. Whilst the large trees are a never-failing source of wonder and delight to those who have visited the woods, there are few, perhaps, who know that the place contains another great mystery, made by hands (but whose hands?) in the long ago, before Columbus ever sailed the sea to unknown lands. In the northeast corner there is a perfect circle fifty yards in diameter to the inner portions of the circle, outside of which is now a depression or canal, fifteen feet wide and about one foot and a half deep; large oak trees two feet in diameter, with smaller trees of beech, etc., are standing in this canal; there are two gates if we may call them such, directly east and west, and within the large circle are slight mounds of elevation, fifteen feet in diameter and fifteen feet apart, the whole laid out with the skill of an engineer. What they were for and what they contain is not known, as no antiquarian yet delved beneath the surface to disclose their secrets. Dr. M. S. Pixley, of this city, who owns the grove, expects to keep it exclusively for picnic purposes, only adding what is necessary to a great popular resort without marring its native beauty. Some day he may take a notion to investigate the mysteries that lie buried in the northeast corner.

Heretofore Pixley's grove has been known chiefly as a charming place for holding picnics, but now it is about to figure in the annals of archaeology and forestry. Dr. Pixley has received a well-drawn map of Scioto county from the scientific department of the Ohio State Archaeological and Historical Society, with a request for him to mark upon the same the location of the rings, or earthworks, described as being in his grove, so they may be transferred to the State Archaeological map, on which they have already nearly 4000 earthworks located. Of course he will gladly comply with the request. This is not the first time these earthworks have attracted attention in high quarters. Ten years ago Prof. E. C. Lewis, of the Smithsonian Institute, visited Portsmouth and made an examination of the rings, making maps and taking notes. Said maps and notes are now part of the archives of the Smithsonian Institute at Washington.

EDITOR'S DEPARTMENT.

DR. J. F. SNYDER, EDITOR, - - - - - - - - Virginia, Ills.
PROF. A. F. BERLIN, ASSOCIATE, - - - - - - - Allentown, Pa.
DR. CLARENCE LOVEBERRY, ASSOCIATE.

All communications for the Editor must be addressed to Dr. J. F. Snyder, Virginia, Cass Co., Ills.

In the symposium of opinions upon the question of the American Indian's culture status at the period of his discovery, published in this issue, is a brief but clear and positive declaration of Dr. C. C. Abbott's conclusions regarding the remains of glacial man in the drift gravels at Trenton. Other eminent scientists who have thoroughly investigated the evidences presented by these remains fully share Dr. Abbott's convictions. The whole matter in controversy seems to rest on the relative age of certain sand and gravel deposits in that locality, which Professor Hollick and other expert geologists believe to be the product of glacial forces. Stones found in those sand and gravel beds are conceded by all to have been fashioned by human agency. "The only controversy," says Professor Hollick, "which seems possible, is over the question of intrusion from above, and in view of the facts now advanced, the burden of proof should in fairness rest with those who hold this view."

Granting as true everything claimed by Dr. Abbott, and those who concur in his belief, what new or additional light do the admitted facts shed upon the problem of how America was first peopled? At no other point on this continent but in that limited area of the Delaware Valley, have undoubted traces of glacial man been yet discovered. Let us suppose, however, that similar evidences have been, or may in the future be, discovered elsewhere; this additional testimony will but strengthen the inference that the glacial or preglacial American was, in culture status, but little, if any, superior to some of the higher anthropoid apes of the old world; consequently, an autochthon, created, or evolved from some lower animal form in this region. His best achievements in implement making, of stone, found in the Trenton gravels and claimed to be of glacial age, prove him to have been as devoid of skill or "culture" as the drift men of Abbeville or St. Acheul. If, then, the glacial man of Trenton was not indigenous, it must be shown how a being so low in mental development as to be incapable of bringing to his aid in his life-preserving efforts no better or more effective mechanical devices than flint chips and splintered argillite, could have constructed boats, or the simplest rafts, and reached our shores by navigation; or could have surmounted the many natural obstacles encountered, and survived the perils and hardships of migration from Siberia to New Jersey.

As novices in the business, while conducting The Antiquarian last year, we were beguiled into reprinting two or three bare-faced "fakes" which a little reflection would have consigned to the waste basket. Such thoughtlessness was reprehensible, even in new beginners, and we felt much dejected about it. We feel better now; inasmuch as "misery loves company," we are greatly consoled by the discovery that we are not alone in blundering, but have exalted company, as is attested by the following in the Scientific American of January 1st:

"Twenty thousand years ago, according to the announcement of Professor Walters, the archaeologist, in the New York Sun, a terrible battle was fought on the Arkansas river, in the Indian Territory, between the mound builders and the Mayas, in which over 75,000 warriors bit the dust. He has reached this remark-

able conclusion on account of his investigations of a prehistoric burying ground in the Choctaw Indian country, which he has found to cover thirty acres and to contain fully 75,000 skeletons. His attention was first called to the remarkable number of skeletons to be found there several months ago, when the Kansas City, Pittsburg and Gulf railway was built through the Choctaw country. The workmen, in grading, brought to light tons of human bones and a remarkable number of implements of savage warfare, and Professor Walters set about to investigate the matter scientifically. To his amazement, he found a large tract literally underlaid with these relics of a forgotten race. The skulls were pierced with darts or arrow heads, one specimen containing thirteen moss agate arrow points. This proved that they died in battle. The skeletons were found buried in sand, and above the sand were two distinct strata formed in geological periods. These facts enabled Professer Walters to compute approximately the period when the battle occurred. He has compared the facts just learned with the result of seventeen years' previous study of the mound builders, and formed the theory that the battle was one of a long series of sanguinary encounters between that mysterious race and the Mayas, which latter race came from Central and South America and sought to gain possession of North America."

Professor Walters may be a real personage—a professional humorist, perhaps, fond of perpetrating jokes; but we are surprised that journals of the age, acumen and high character of the New York Sun and Scientific American will print such stuff and give it their endorsement of "conclusions from scientific investigations."

Professor Lewis W. Gunckel, of Dayton, Ohio, is—to borrow one of Mr. Lincoln's expressions—still "pegging away" at the Mayan hieroglyphics; having, in The Anthropologist for December, 1897, another monograph entitled "Analysis of the Deities of Mayan Inscriptions;" in which he notes the frequency of occurrence and various positions, in the several tablets and codices, of different glyphs representing the human face, or grotesque face masks. Just how much Professor Gunckel is accomplishing toward the discovery of the much coveted key to those mysterious characters we cannot say; but in any event, his persistent industry and intelligent labors in that study are highly commendable.

We very much regret having been compelled to defer to this number of our journal several very interesting papers that were already in type and should have appeared last month. The extraordinary number of illustrations in our January edition occupied so much space that no other course could be pursued. We beg our contributors to overlook this unavoidable delay, and will endeavor not to repeat it in future. J. F. S.

A few words in reference to the Valentine collection, mentioned in the November number of the Antiquarian by the sculptor, Macdonald, as being one of the finest seen by him, may be of interest to my readers.

A number of years ago this collection was publicly exhibited in the city of Richmond, Va., and the authenticity of some of the objects in it was doubted at that time by the late Dr. Charles Rau, then the learned curator of the Prehistoric Antiquities in the Archaeological museum of the Smithsonian Institution at Washington, D. C.

As the writer does not at present know where in his large and ponderous archaeological library to look for Dr. Rau's exact statement, he can not here give it verbatim. Suffice it here to say that the charges then made by this trustworthy and reliable archaeologist were, at least to the writer's knowledge, never refuted.

Too often has the writer discovered in collections implements made by "Flint Jacks," who are plying their nefarious trade all over the country; nor does it seem that a stop can be put to them. This is attributable to the fact that so many collectors of prehistoric objects or implements keep themselves in ignorance of what they get into their hands. They are not archaeologists, but simply curiosity gatherers, aiming only at becoming possessed of that which pleases their eye. With this gentry it is simply possession, which to them is sufficient, hence are they often imposed upon, and when too late see their folly. A. F. B.

NOTES AND NEWS.

Mr. R. M. Stevenson, who resides a few miles west of Buena Vista, in the Ohio River Valley, made an interesting discovery last month of the skeleton of a human being, seventeen feet below the surface, while digging a cistern. It is in a good state of preservation, and is supposed to be the skeleton of a Mound Builder.

This has some bearing on a survey that is to be made in this section by the Ohio State Archaeological and Historical Scciety, to investigate the blue banks where their curator has discovered evidence of a village site twenty feet below the surface, along the bank of the Ohio River.

George S. Younglove, Waushara, Ohio, found a very curious specimen of the workmanship of the prehistoric races who inhabited this country, in the shape of a pipe. It is 2 3-4 inches high, standing on a base about 3 1-2 inches square. The bowl is nearly as large as the base, and on it are carved four faces, no two of which are alike.

John Stepper has located, near Massillon, Ohio, what he thinks is a prehistoric village site and burial ground.

"The land has been cultivated for years," he said, "and hundreds of stone and hematite implements, such as double-bitted axes, banner stones and hammers, have been found, besides fragments of sandstone pottery and hundreds of flint arrow heads. One of the finest specimens found is an effigy pipe made of some unknown black material. The village is located at the fork of Sugar Creek and Fox Run. On the north side of Fox Run is what I think is the cemetery, for there a number of limestone graves have been found."

Mr. Stepper has about 1500 good specimens which were found on his farm.

The Government of India owns all the ancient mounds in India, and at present has several archaeological surveys at work upon them. They are trying to keep all the specimens for their own museums and preserve the earthworks as near their original shape as possible.

While digging a drainage ditch along a country road, near Dixon, California, a skeleton was unearthed at a depth of six feet. It was covered with sand and rock and seemed to show that great care had been exercised upon it in burial. It was very likely the skeleton of an Indian.

A man by the name of Dunnigan, from Woodland, California, while field hunting on an old Indian village site, found a pestle weighing 25 pounds.

John Hammer, of Wrangleton, California, while removing a stump of a red-wood, which measured fourteen feet in diameter, found a pestle weighing three pounds and measuring seven inches in length, just below the center among the roots. As the stump was sound throughout, the question is: How did the pestle get there? And as the stump from its size, represents a growth of thousands of years, How long had the pestle lain there?

Editor of American Archæologist:

A correspondent on page 308 of the November Antiquarian, asks for name of author or title of poem. Name is "The Prairies"; author is William Cullen Bryant. I first saw it in a Reader adopted in the schools in 1858. GEO. L. BIRD.

Brockton, Mass.: 543 North Montello Street.

Interesting Discoveries in South Brooklyn.

An old cemetery, older than any other known cemetery within the limits of Greater New York, was discovered near Ryder's Pond, at the head of Garrison's Creek, not far from Sheepshead Bay, recently, by men who were cutting Avenue U through to Ryder's Pond. It was an Indian cemetery, and must have been near oyster beds that doubtless had their existence in Dead Horse Inlet or its vicinity.

The men under Contractor Jenkins got to about ninety yards from the pond when the pick of an Italian laborer went rattling into a bed of oyster shells. These were about nine inches from the surface. The shells extended about five feet in one direction and four in another. They were about three feet and nine inches deep. The shells had been laid in with the outer side up and piled in as one would pack books of different sizes in a box.

After a while the diggers got down to sand again. This sand was about four feet and a half from the surface. One of the teamsters, waiting for his wagon to be loaded, saw a strange large shell, as he supposed, tossed up by a shovel on his wagon. This man was William Considin, who lives in Ryder's lane near by. Considin picked the supposed shell up, and knocked a little black mould off of it, and then recognized that it was bone. Finally he made out that it was the side of a man's skull, including an eye aperture. This bone was carried to the dump with the rest of the load.

The teamster found also some bits of pottery as big as one's hand in some cases. These were "smooth as glass on one side and all rough on the other. The rough side had a lot of marks all over it just as if they'd tried to draw birds or animals on it. Save them things? Naw, they was busted I tell you, and weren't any good. Yes, they went to the dump, too, besides some other bones about as big as a broom handle, and some ribs, too."

Two more of these shell-filled holes were found on Friday, and five or six on Saturday. The teamsters, who did no loading, amused themselves by picking out some of the larger bones, and after looking them over, tossed them into the wagons to be carried down to the dump, where the roadway had to be raised instead of lowered. In all, at least twelve, and probably fifteen, of these graves were cut into. As there were so many graves, the men couldn't help noticing some peculiarities of construction.

First of all, at the surface were a lot of shells scattered and broken by ploughs. These broken shells were mixed with nine inches or more of black soil. Then came the mass of shells. There was a different kind of shell, called the periwinkle, there, too. In some of the graves there was one only, at least the careless onlookers found no more, and in the others two.

The smaller of the shells, where there were two, was about eighteen inches from the surface, and a foot beneath was a bigger periwinkle shell. In a grave which was dug into by a reporter the small periwinkle shell was three inches long, and a foot lower was found another ten inches long.

Under the oyster shells was found black mould mixed with fragments of bone. The larger periwinkle shell may have been placed over the face of the dead person. The mould at the bottom of the gravel is mixed with red sand, and below it is the gray beach sand.